

Assignment 3

● Graded

Group

Kyle Hoop

Adam Fenjiro

[✎ View or edit group](#)

Total Points

52 / 60 pts

Question 1

database design for movie data

18 / 20 pts

- 0 pts Correct
- 0 pts Need to merge many to exact one, or one to exact one relationships.
- 3 pts Some entities are lacking a relation table
- 3 pts Some relations are lacking a relation table
- 2 pts Tables have attributes that are not reflected in the diagram
- 2 pts Tables are missing attributes shown in the diagram
- 2 pts The sequel relation is missing foreign key(s)
- 2 pts Missing foreign key labels
- 2 pts Attributes need unique names
- 2 pts Some foreign keys are not keys
- 5 pts No foreign keys shown
- 15 pts missing schemas
- 2 pts missing primary key label
- 5 pts missing revised E/R

✓ – 2 pts Missing owns relation between studio and movie

Question 2

- 0 pts Correct
 - 5 pts missing revised E/R
 - 15 pts missing schema for relationships between entity set
 - 30 pts Missing
-

Entity Set: Department (1)

- 0.5 pts missing PK label
 - 0.5 pts missing attribute (should have dept_name, building budget)
 - 1 pt missing
-

Entity Set: instructor (1)

- 0.5 pts missing pk label
 - 0.5 pts missing attribute should have id, name salary
 - 0.5 pts missing fk label
-

Entity Set: student (1)

- 0.5 pts missing attribute (should have id name credits, dept name)
 - 0.5 pts missing key label
 - 0.5 pts missing fk label
-

Entity Set: course (1)

- 0.5 pts missing pk label
 - 0.5 pts missing attributes should have id, title, credits, deptname
-

Entity Set: classroom (2)

- 0.5 pts missing/incorrect pk label
 - 0.5 pts missing attributes
 - 0.5 pts incorrect fk
-

Entity Set: Section (4)

- 0.5 pts incorrect attributes (should have courseid, sec_id, semester, year, capacity, building, room number)
 - 0.5 pts missing primary key label
 - 3 pts missing
 - 0.5 pts incorrect primary key
-

Relationship: dept - course (1)

- **1 pt** many to exact one merge to many side
 - **1 pt** missing
-

Relationship: dept - instructor (1)

- **1 pt** many to exact one merge to many side
-

Relationship: dept - student (1)

- **1 pt** many to exact one, merge to many side
 - **1 pt** missing
-

Relationship: instructor - section (1)

- **1 pt** many to exact one merge to many side
 - **0.5 pts** incorrect attribtues
-

Relationship: course - section (2)

- **1 pt** many to exact one, merge to many side
-

Relationship: student - section (2)

- **2 pts** missing
 - **0.5 pts** missing or incorrect primary key label
 - **0.5 pts** missing foreign key label
 - **0.5 pts** missing attribute grades
 - **0 pts** [Click here to replace this description.](#)
-

Relationship: section - classroom (1)

- **1 pt** many exact one, merge it to many side
 - **1 pt** missing
-

Relationship: course - course (preq) (2)

- **2 pts** missing
 - **0.5 pts** missing primary key label
 - **0.5 pts** missing foreign key label
 - **0.5 pts** attribtue missing, should be (course_id, preq_id)
-

- **2 pts** see comment

- 2 pts need to merge many to exact one to many side

- 1 pt see comment

💬 - 6 pts missing several schemas:
1. preq, register;
2. incorrect attributes, do not over place secid and student id, for example , sec and student are many to many relationship, cant merge it to section.

Question 3

ISA design

10 / 10 pts

3.1 The straight E-R method

5 / 5 pts

✓ - 0 pts Correct

- 1 pt missing pros and cons

- 1 pt minor error

- 2 pts major error

- 5 pts missing

3.2 The nulls method

5 / 5 pts

✓ - 0 pts Correct

- 1 pt missing pros and cons

- 2 pts major error

- 1 pt minor error

- 5 pts missing

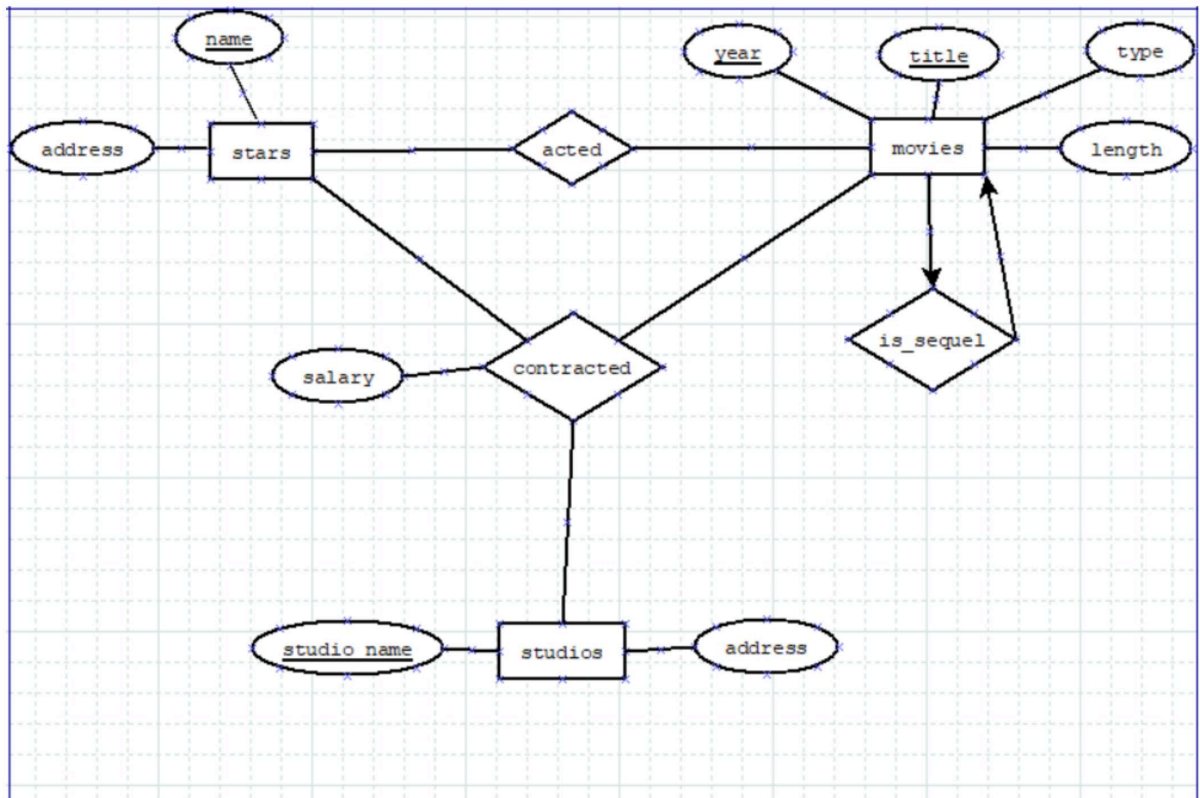
Question assigned to the following page: [1](#)

CS3425 Assignment 3 (60 points)

Goal Convert ER diagram to relational schemes

1. (20 points) Design database for movie data

1.1. (5 points) Our TAs will promptly grade your assignment2. Once you receive the grading comments, please review and make any necessary corrections to the ER model diagram for the movie data from the last assignment.



Question assigned to the following page: [1](#)

1.2. (15 points) Convert the above ER diagram to relation tables. You don't need to provide the real SQL statement, just the relational model, like this R(A1, A2, A3). You need to:

- Underline the primary key or list the primary key explicitly in its own line like this PK(A1,A2)
- Specify the foreign keys. Use the format like this: FK (A1,A2) references TableX(A3,A4).
- Merge the many-to-exactly one relationship with the relation of the many side
- Merge the one-to-exactly one relationship with the relation of the left one side

***stars have two FK, one to movies due to the contracted and acted relationship, and one to studios due to the contracted relationship.**

stars(name, address, title, year, studio_name)
FK(title, year) references movies(title, year)
FK(studio_name) references studios(studio_name)

studios(studio_name, address)

movies(title, year, length, type)

Question assigned to the following page: [2](#)

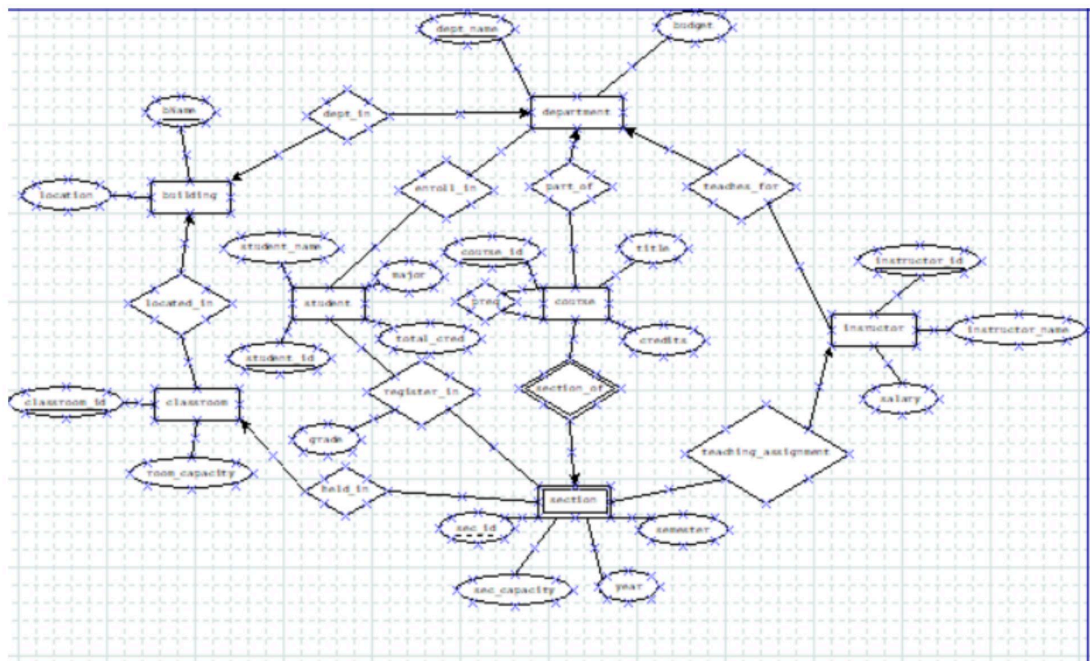
2. (30 points) Design database for university database

2.1. (5 points) Our TAs will promptly grade your assignment2. Once you receive the grading comments, please review and make any necessary corrections to the ER model diagram for the university data from the last assignment.

2.2. (25p) Convert your ER design to relational schemas

You don't need to provide the real SQL statement, just the relational model, like this R(A1, A2, A3). You need to:

- Underline the primary key or list the primary key explicitly in its own line like this PK(A1,A2)
- Specify the foreign keys. Use the format like this: FK (A1,A2) references TableX(A3,A4).
- Merge the many-to-exactly one relationship with the relation of the many side
- Merge the one-to-exactly one relationship with the relation of the left one side



Question assigned to the following page: [2](#)

department(dept_name, budget, ~~bName~~, student_id)

FK: bName references building(bName)

FK: student_id references student(student_id)

instructor(Instructor_id, instructor_name, salary, dept_name, sec_id)

FK: dept_name references department(dept_name)

FK: sec_id references section(sec_id)

student(student_id, student_name, major, tot_cred, sec_id)

FK: sec_id references section(sec_id)

building(bName, location)

classroom(classroom_id, room_capacity, bName)

FK: bName references building(bName)

course(course_id, title, credit, dept_name)

FK: dept_name references department(dept_name)

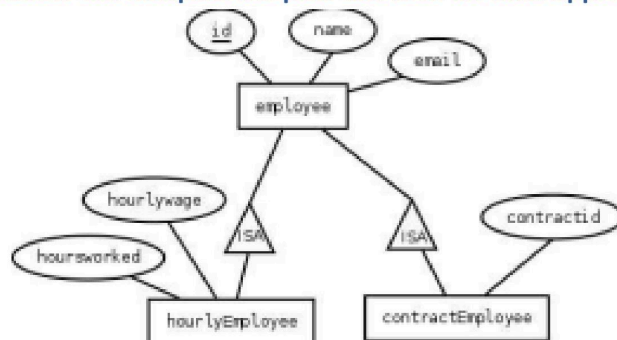
section(sec_id, sec_capacity, semester, year, course_id, classroom_id, student_id)

FK: course_id references course(course_id)

FK: classroom_id references classroom(classroom_id)

Question assigned to the following page: [3.1](#)

3. (10 points) Convert the following E/R diagram to a relational database schema, using two approaches and compare the pros and cons for each approach.



3.1. The straight E-R method

employee(id, name, email)

hourlyEmployee(id, hoursworked, hourlywage)
FK: id references employee(id)

contractEmployee(id, contractid)
FK: id references employee(id)

Pro: the big advantage to this method is that it is easier to get information about a specific type of employee as they are already sorted by either hourly or contract.

Con: The big disadvantage to that method is that it requires more databases to store the information, and there will be twice as much data stored, as each employee is going to be in the employee database as well as one of the types of employee database.

Question assigned to the following page: [3.2](#)

3.2. The nulls method

employee(id, name, email, hoursworked, hourlywages, contractid)

Pro: this method will use less space, as all of the information is stored in one database.

Con: this method does lead to more complications due to the use of null, and it is more difficult to get specific information about a type of employee, as they are both on the same table.